Figure 1

$$R_{4}-0$$
 Ci A

$$R_4$$
= a) - (CH₂)₇CH₃
b) - (CH₂)₈CH₃

- A) base
- B) IRA 402/OH form

Figure 2

$$CI$$
 $OE:$
 OR_{2}
 OR_{3}
 OR_{4}
 OR_{5}
 OR_{5}

$$\begin{array}{c|c}
OR_{\underline{\cdot}} & OR_{\underline{\cdot}} & OR_{\underline{\cdot}} \\
OR_{\underline{\cdot}} & OR_{\underline{\cdot}} & OR_{\underline{\cdot}} \\
\hline
S a,b & 6 a,b
\end{array}$$

$$R_4$$
= a) - (CH₂)₇CH₃
b) - (CH₂)₁₃CH₃

- A) R₄OH, SOCl₂
- B) Et₃SiH, BF3.Et₂O
- C) NaN₃
- D) Pd/C H₂, HCHO
- E) CH₃I
- F) IRA 402 OH

Figure 3 A

$$N_{3} \longrightarrow OEt \xrightarrow{A} N_{3} \longrightarrow OH \xrightarrow{B} N_{3} \longrightarrow NH \longrightarrow CN$$

$$O(CH_{2})_{13}CH_{3} \longrightarrow O(CH_{2})_{13}CH_{3}$$

$$3 b \qquad 1 \qquad 2$$

$$\begin{array}{c}
C \\
 & \downarrow \\
 & \downarrow$$

A) NaOH 4N. MeOH. 16h. t.a

B) H2NCH2H2CN, DMF, TEA, DEPC

C) THF. Ph3P

D) (BOC)20. NaOH IN

E) THF. Ph3P. DEAD. E13SiN3

F) HCI 3N, NaOH IN

Figure 3 B

$$\begin{array}{c|ccccc}
O(CH_2)_{13}CH_3 & O(CH_2)_{13}CH_3 \\
N-N & N-N \\
N-N & N+2 & N+2 & N+2 & N+2 & N+2 \\
\hline
O(CH_2)_{13}CH_3 & N-N & N-N & N+2 & N-N \\
N-N & N-N & N+2 & N+2 & N+2 & N+2 \\
\hline
O(CH_2)_{13}CH_3 & N-N & N-N & N+2 & N-N \\
N-N & N-N & N+2 & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N-N & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N-N & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N-N & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N-N & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N-N & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N+2 & N-N \\
\hline
O(CH_2)_{13}CH_3 & N-N & N-N \\
\hline
O(CH_2$$

Н

- н) нсоон. н₂со
- D CH31
- L) IRA 402 attiv. OH

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PRINT OF DRAWINGS AS ORIGINALLY FO

Figure 4

$$R_4$$
= a) - (CH₂)₇CH₃
b) - (CH₂)₁₃CH₃

- A) 1) BuLI 2)BF₃. Et₂O
- B) R₄OCOCl, Base
- C) $R_4N=C=O, BF_3 \cdot Et_2O$
- D) Quinuclidine F)Trimethylamine
- H) Pyridine
- $E=G) H_2,Pd/C$